

Interactions between killer whales (*Orcinus orca*) and northern blue fin tuna (*Thunnus thynnus*) fishery in the Strait of Gibraltar

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Sightings of killer whales have been reported around the area of the Strait of Gibraltar for more than 500 years. The northern blue fin tuna (*Thunnus thynnus*) migrates throughout the Strait of Gibraltar entering the Mediterranean Sea in spring to breed and leaving the Mediterranean sea in summer. This large fast swimming fish species is one of the prey of killer whales in this area in spring and summer. In spring tuna are caught using trap nets (almadrava) while in summer they are caught from small fishing vessels (5-9 meters) using drop lines. This fishery only take place at ebbing tide from mid July to mid August when approximately 100 fishing vessels concentrate into two small fishing sectors located on the edge of the Moroccan shelf at a depth comprised between 200-250 m. For most of the summer sightings, killer whales were observed swimming through the fishing fleet, removing the complete fish or part of the tuna as it was being hauled up to the boat. Out of 33 photo-identified killer whales that visit the Strait of Gibraltar, 15 different individuals are known to interact with this fishery, with most of the depredation resulting from 9 individuals. The amount of complete fish lost to killer whales is unknown but a survey conducted on the Tarifa fish market revealed that 18 % of the tuna were damaged by killer whales. The only method used by fishermen to prevent depredation is to let the tuna dive to the bottom after attaching a buoy to the end of the line in the hope that killer whales will leave the area before the running tide. Due to the high value of intact northern blue fin tuna on the Asian market the economical loss endured by fishermen due to lost or damaged fish is considerable. Interactions with this fishery provide killer whales with easy access to large, energy-rich fish which are otherwise difficult to catch because of their rapid speed and high-endurance.